

AD-A100 058

TEXAS UNIV AT AUSTIN APPLIED RESEARCH LABS  
SONAR TEST AND TEST INSTRUMENTATION SUPPORT. (U)  
SEP 80 D D BAKER, J L SHOREY, B O MOSES

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
		AD-A100 058
4. TITLE (and Subtitle)	5. TYPE OF REPORT & PERIOD COVERED quarterly progress report 1 June - 31 August 1979	
SONAR TEST AND TEST INSTRUMENTATION SUPPORT		6. PERFORMING ORG. REPORT NUMBER QPR No. 13
7. AUTHOR(s)	8. CONTRACT OR GRANT NUMBER(s) N00140-76-C-6487	
Dudley D. Baker James L. Shorey Bruce O. Moses		
9. PERFORMING ORGANIZATION NAME AND ADDRESS Applied Research Laboratories The University of Texas at Austin Austin, TX 78712	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS New London Laboratory Naval Underwater Systems Center New London, CT 06320	12. REPORT DATE 9 September 1980	
	13. NUMBER OF PAGES 13	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A	
16. DISTRIBUTION STATEMENT (of this Report)		
Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) (U) Applied Research Laboratories, The University of Texas at Austin (ARL:UT), was awarded Contract N00140-76-C-6487, sponsored by New London Laboratory, Naval Underwater Systems Center, effective 1 June 1976. Work under this contract involves technical support with sonar testing, test instrumentation, and documentation. This report describes progress made under the tasks that are still active under the subject contract.		

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## I. INTRODUCTION

Applied Research Laboratories, The University of Texas at Austin (ARL:UT), was awarded Contract N00140-76-C-6487, sponsored by New London Laboratory, Naval Underwater Systems Center (NLONLAB NUSC), effective 1 June 1976. Some of the work under this contract represents a follow-on effort to previous work sponsored by NLONLAB NUSC under Contract N00140-74-C-6316.

The work under Contract N00140-76-C-6487 was originally divided into six task areas that focused on technical support in areas of sonar technology:

- I. AN/FQM-10(V) Sonar Test Set Field Support
- II. Transducer Repair Facility Test Site Field Support
- III. AN/WQM-5 Sonar Test Set Field Support
- IV. Special Purpose Passive Sonar Systems Support
- V. Sonar Instrumentation Test and Evaluation
- VI. Study of Towed Line Array Acoustical Testing at Transducer Repair Facilities

Additional tasks were added by contract modifications, as follows:

- VII. AN/SQM-( ) Sonar Noise Measuring Set Development (Mod P00019)
- VIII. AN/WQM-5( ) Sonar Test Set Development (P00019)
- IX. Sonar Dome Maintenance Documentation Support (P00019)
- X. AN/BQQ-5 Power Supply Development (P00019) (follow-on work under Contracts N00024-77-C-6035 and N00123-79-C-0459)
- XI. AN/BQQ-6 Test Instrumentation (P00035)
- XII. AN/WLR-12 Calibration (P00033)

This report is Quarterly Progress Report No. 13 under Contract N00140-76-C-6487, for the period 1 June - 31 August 1979.

## II. TRF SUPPORT

### A. Introduction

ARL:UT provides material and technical support for the Transducer Repair Facilities (TRFs) at three Naval shipyards: Portsmouth (PTSMH), Mare Island (MARE), and Pearl Harbor (PEARL).

During this report period, ARL:UT has provided support for the TRFs as described in the following subsections. The activities described below conclude ARL:UT's efforts toward TRF support under Contract N00140-76-C-6487.

### B. MX-9818/GQM-1 Adapter, Filling Fixture, Transducer

The third of three filling fixtures was shipped to NAVSHIPYD PEARL on 27 June.

### C. NAVSHIPYD PTSMH Pressure Vessels

The cable entry stuffing tubes, the final paint, and the remainder of the associated hardware for the 3000 psi and the 1000 psi pressure vessels were shipped to NAVSHIPYD PTSMH on 28 June.

### D. Repair Fixture for AN/UQN-14,4 Transducer

The last two repair fixtures were shipped to NAVSHIPYD PEARL in June, thus completing ARL:UT's work on this project.

III. SPECIAL PURPOSE PASSIVE SONAR SYSTEMS SUPPORT

No work was performed on this task during the report period.

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#### IV. SONAR INSTRUMENTATION TEST AND EVALUATION

##### A. AN/GQM-2 Transducer Test Set

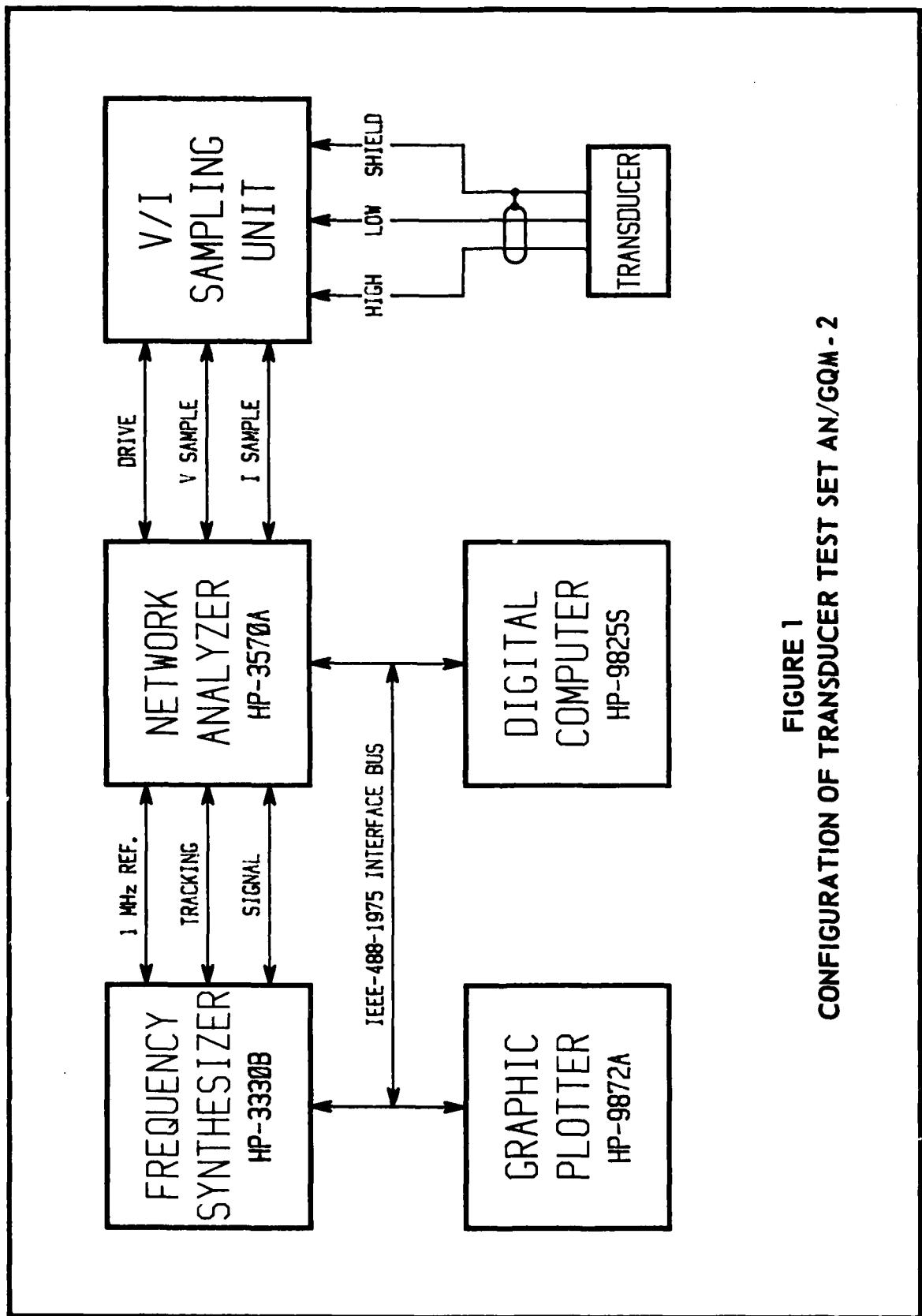
Early in the report period, assembly and checkout of all five units of the subject test set were completed. It was decided that an expedient way to accomplish TRF training would be to hold a course at ARL:UT, just prior to shipment of the units, where five trainees could operate sets simultaneously. This course was held during the week of 25 June. It was attended by three representatives from each TRF.

Figure 1 is a block diagram of the test set. Figure 2 is a photograph of an assembled set. Three completed sets were shipped to the TRFs on 16 July, one each to NAVSHIPYD MARE, NAVSHIPYD PEARL, and NAVSHIPYD PTSMH. The remaining two sets were held at ARL:UT because of a failure and the need to retain one set to use to complete the software development. The second set for NAVSHIPYD MARE was shipped on 3 August.

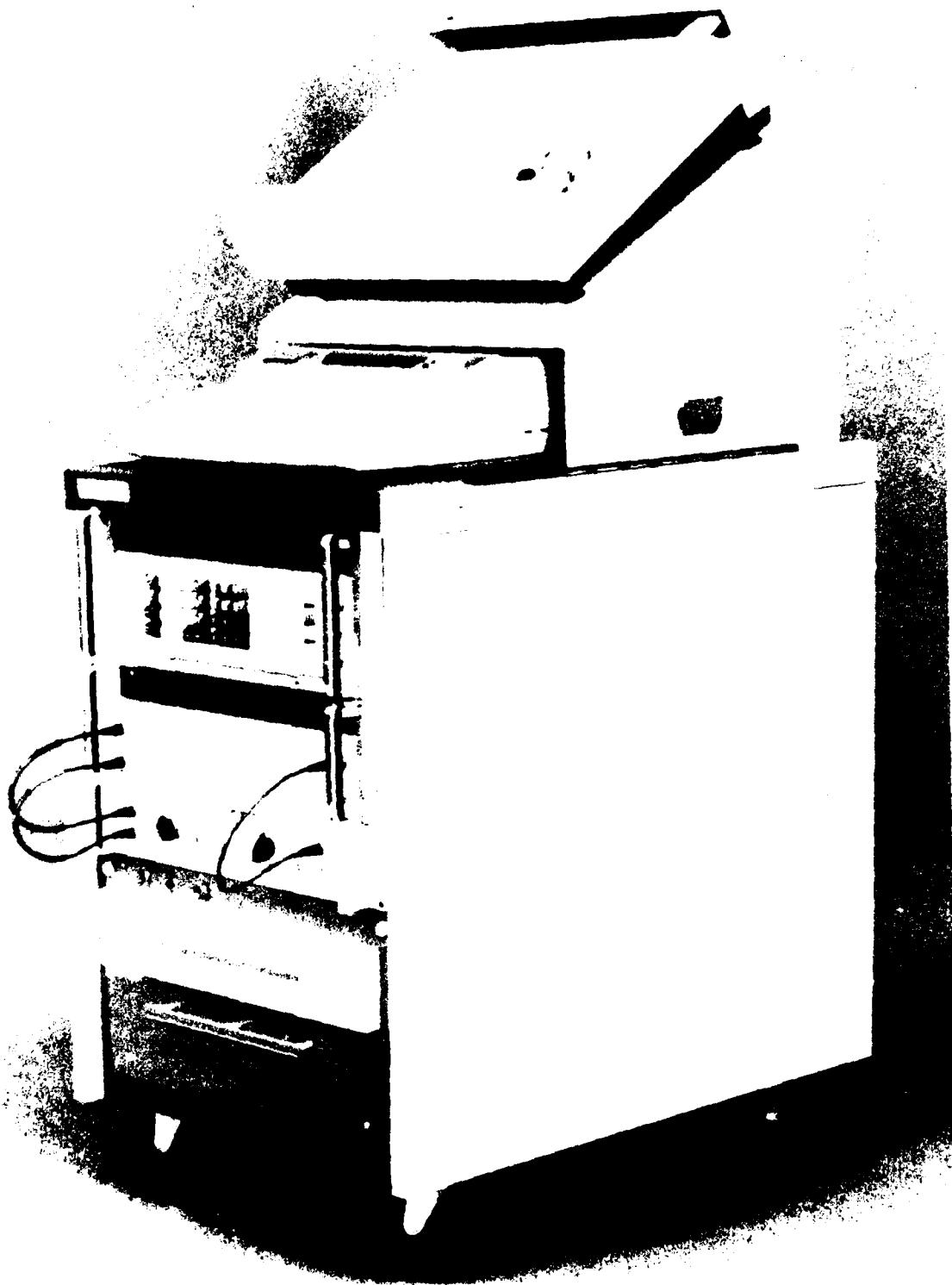
Preliminary software was provided to the TRFs with the hardware, and was updated twice in August to correct minor problems. The final version of the software is expected to be completed during the next report period.

##### B. AN/UQM-( ) and AN/SQM-( ) Test Sets

During this report period, no effort was expended on the AN/UQM-( ) and the AN/SQM-( ) Test Sets.



**FIGURE 1**  
CONFIGURATION OF TRANSDUCER TEST SET AN/GQM-2



**FIGURE 2**  
**TRANSDUCER TEST SET AN/GQM-2**

V. AN/WQM-5( ) PROGRAM

A. AN/WQM-5( ) Field Change Program

All AN/WQM-5( ) Field Change Kits and spares have been delivered by C-Tech, Inc.

During this report period, ARL:UT delivered the following modified AN/WQM-5( ) Test Sets.

AN/WQM-5B, Ser A21 to MOTU 10 (Charleston, SC)

AN/WQM-5A, Ser B1 to MOTU 6 (Mediterranean)

AN/WQM-5A, Ser A10 to MOTU 12 (Mayport, FL)

To date, a total of 14 modified sets have been delivered.

B. AN/WQM-5 Field Support Services

ARL:UT provides field maintenance engineering support for the AN/WQM-5 Sonar Test Sets located at various Naval shipyards, laboratories, and support activities.

During this report period, ARL:UT provided support for AN/WQM-5 test sets by sending one each 3A4 and 3A7 circuit cards to NAVSHIPYD PEARL to effect the repair of unit 3.

9 September 1980

DISTRIBUTION LIST FOR  
QUARTERLY PROGRESS REPORT NO. 13  
UNDER CONTRACT N00140-76-C-6487  
1 JUNE - 31 AUGUST 1979

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